

IN THE CLAIMS:

1. (Currently Amended) A recording medium on which ~~[[is]]~~ are recorded a plurality of titles between which branching is possible, and an index table, at least one application and an operation mode object,

wherein the index table shows correspondence between the operation mode object

5 and each title,

the operation mode object is either (i) a movie mode object for a movie mode or (ii) a virtual machine mode object for a virtual machine mode,

the movie mode object includes a navigation command showing a control procedure,

10 the virtual machine mode object includes an application management table,

each application is described in Java programming language, and stored in an archive file so that the application is readable into a heap area of a virtual machine, and

the application management table shows one or more application that has a life cycle bound to the title corresponding to the virtual machine mode object.

15 each application is a program written in a virtual machine-oriented programming language, and a life cycle in which each application can be executed by a virtual machine is specified in advance,

each title includes a management table, and

each management table shows one or more of the applications that has a life cycle

20 bound to the title.

2. (Currently Amended) The recording medium of Claim 1, wherein

the index table has a title number that uniquely identifies each title corresponding to an operation mode object number of the operation mode object described therein,

archive files are recorded on the recording medium, each archive file storing data

5 and a program class file that constitute a given application, and

the life cycle of the application is managed by describing each application that has a life cycle bound to a title is expressed according to a combination of an identifier of the archive file that stores the application, and a title number that uniquely identifies the title into the application management table included in the virtual machine mode object.

3. (Currently Amended) A playback apparatus that simultaneously performs playback of a title ~~that includes a digital stream~~, and execution of [[an]] at least one application, the playback apparatus comprising:

a module manager operable to ~~control branching between a plurality of titles~~

5 select a current title from a plurality of titles based on an index table; and

a module operable to execute the application,

wherein the recording medium has the index table, each application and an operation mode object recorded thereon,

10 the index table shows correspondence between the operation mode object and each title,

the operation mode object is either (i) a movie mode object for a movie mode or (ii) a virtual machine mode object for a virtual machine mode,

the movie mode object includes a navigation command showing a control procedure,

15 the virtual machine mode object includes an application management table,
the application is a program described in Java programming language,
the application management table shows one or more applications that has a life
cycle bound to the title corresponding to the virtual machine mode object, and
20 a playback control engine unit operable to play a digital stream that belongs to
one of a plurality of titles; and

the module includes an application manager operable to, each time a branch
between titles occurs, current title is newly selected from the plurality of titles, perform run
control so as to run an application that has a life cycle bound to a branch destination title the
current title and termination control so as to terminate an application that does not have a life
25 cycle bound to the branch destination the current title based on the application management table
corresponding to the current title.

4. (Currently Amended) The playback apparatus of Claim 3, wherein

~~each title includes an application management table that shows at least one~~
~~application that has a life cycle bound to the title, and~~

the run control by the application manager includes control for, ~~when a branch~~
5 ~~between titles occurs~~ when a current title is newly selected from the plurality of titles, referring
to the application management table ~~of the branch destination title~~ to judge whether an
application exists that has a life cycle bound to the ~~branch destination title~~ current title exists,
and, only when ~~[[an]]~~ the application that has ~~[[a]]~~ the life cycle bound to the ~~branch destination~~

title current title exists, running the application that has the life cycle bound to the current title
10 ~~branch-destination~~ .

5. (Currently Amended) The playback apparatus of Claim [[4]] 3, wherein

the run control by the application manager includes control for, when an
~~application-call has been made by an application being run in one title~~ a current title is newly
selected from the plurality of titles, referring to the application management table of the current
5 title to judge whether or not ~~a call-destination~~ an application [[has]] ~~that does not have~~ a life
cycle bound to the current title exists, and ~~activating the call-destination application~~ only when
the ~~call-destination~~ application ~~that does not have~~ has a the life cycle bound to the current title
exists, terminating the application that does not have the life cycle bound to the current title.

6.-10. (Cancelled)

11. (New) A recording method for generating volume data and obtaining a recording
medium on which is recorded the volume data, wherein

the volume data includes an index table, at least one application and an operation
mode object,

5 the index table shows correspondence between the operation mode object and
each title,

the operation mode object is either (i) a movie mode object for a movie mode or
(ii) a virtual machine mode object for a virtual machine mode,

the movie mode object includes a navigation command showing a control
10 procedure,

the virtual machine mode object includes an application management table,

each application is a program described in Java programming language, and
the application management table shows one or more application that has a life
cycle bound to the title corresponding to the virtual machine mode object.

12. (New) A playback method for simultaneously performing playback of a title
recorded on a recording medium, and execution of at least one application, the method
comprising:

5 a manager step for selecting a current title from a plurality of titles based on an
index table; and

a module step for executing the application,
wherein the recording medium recorded thereon the index table, at least one
application and an operation mode object,

10 the index table shows correspondence between the operation mode object and
each title,

the operation mode object is either (i) a movie mode object for a movie mode or
(ii) a virtual machine mode object for a virtual machine mode,

the movie mode object includes a navigation command showing a control
procedure,

15 the virtual machine mode object includes an application management table,
the application is a program described in Java programming language,
the application management table shows one or more application that has a life
cycle bound to the title corresponding to the virtual machine mode object, and

in the module step, each time the current title is newly selected from the plurality
20 of titles, run control is performed so as to run an application that has a life cycle bound to the
current title and termination control is performed so as to terminate an application that does not
have a life cycle bound to the current title based on the application management table
corresponding to the current title.